Albeni Falls Dam Operations

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Seattle District

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US Army Corps of Engineers
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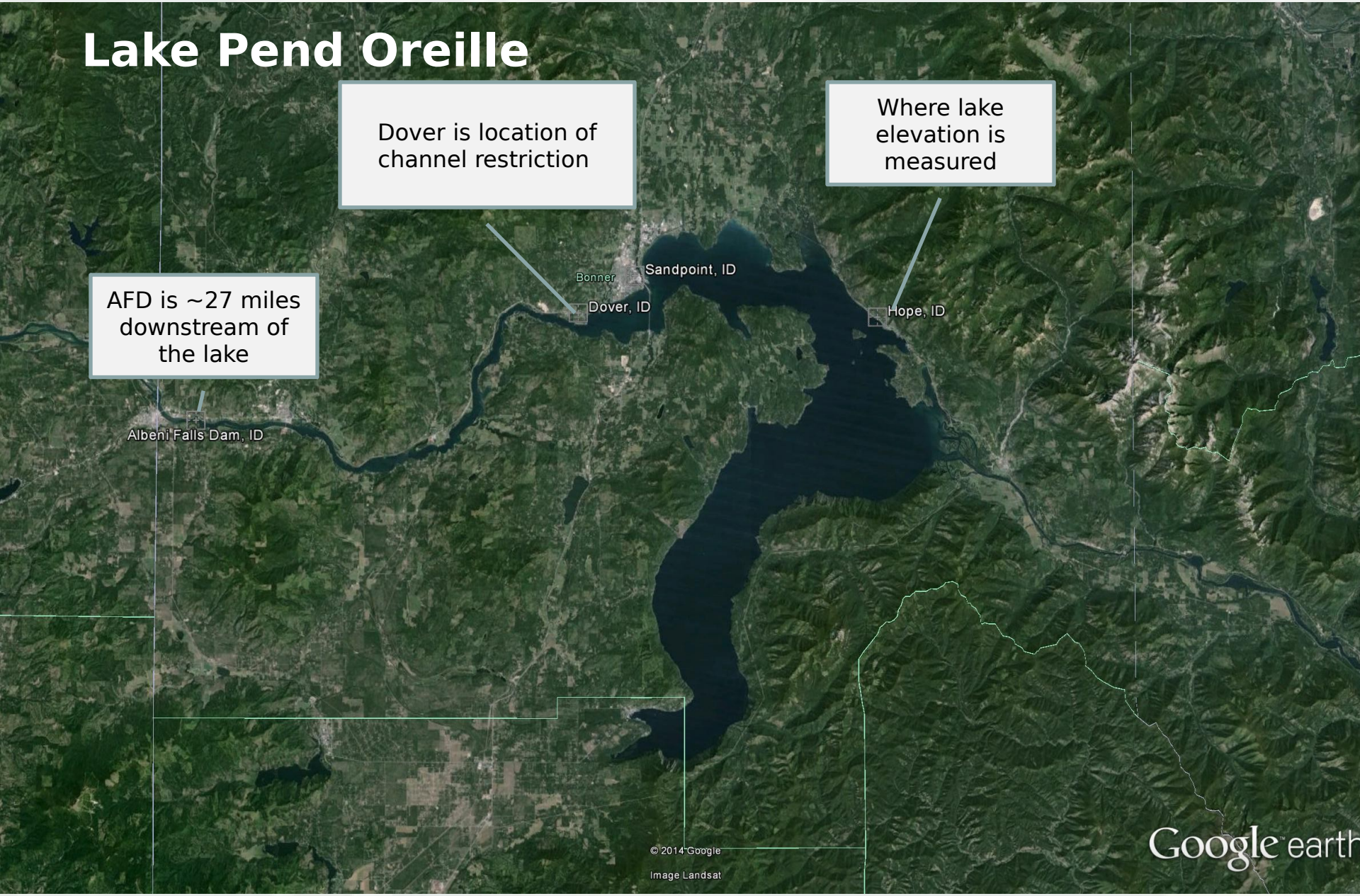
Agenda

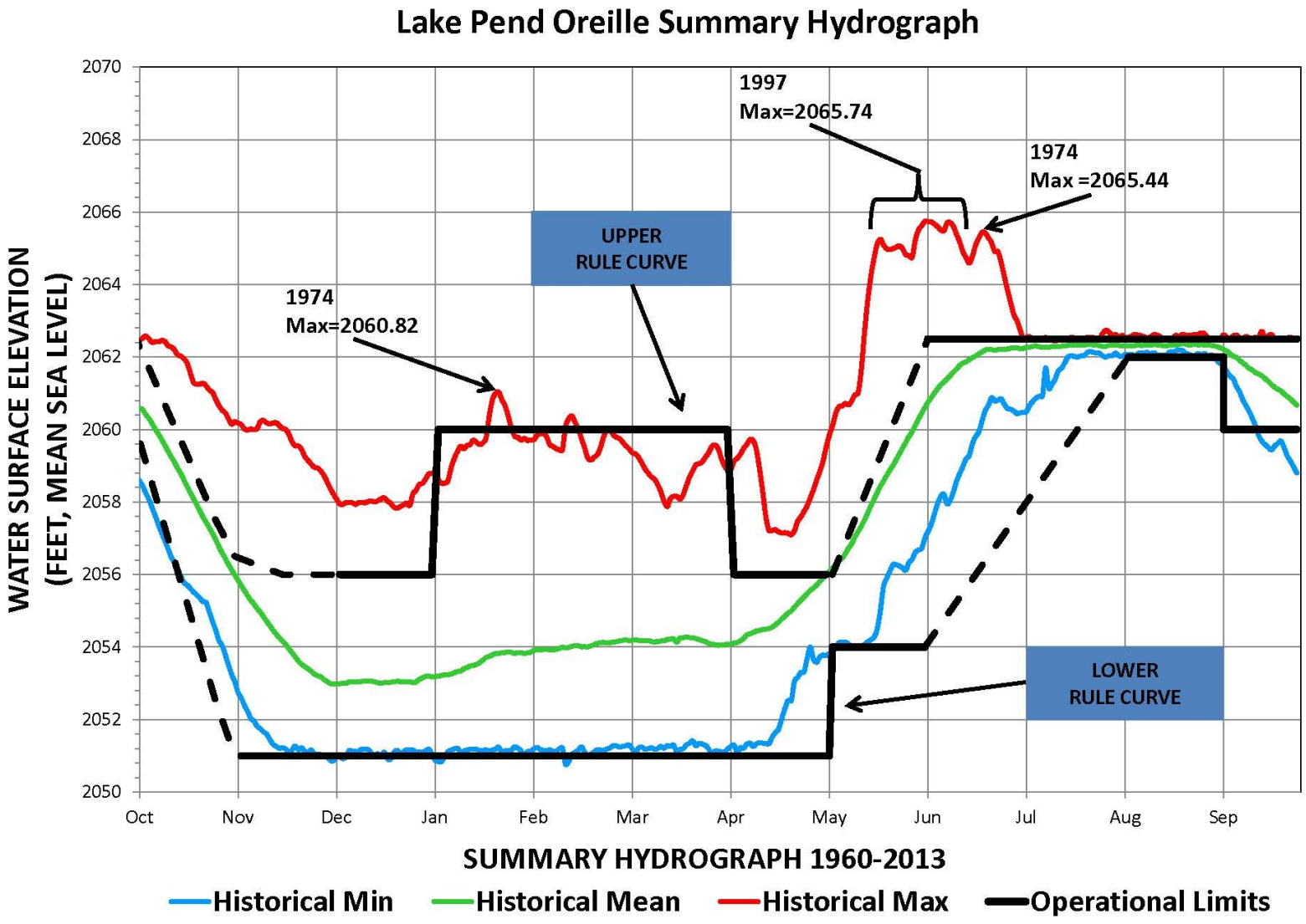
- Introductions
- Albeni Falls Dam Background
- Review Operations this Spring 2014
- Operations this Fall and Winter
- Future Winter Lake Level Coordination
- Q&A

Columbia River Basin Overview

- Originates in Canada, Canada has 15% of the basin area, 30% of average annual flow is from Canada, 50% of worst Columbia flood flows (1894) came from Canada.
- Flows 1,200 miles through 4 U.S. States, drainage area of 259,000 square miles
- Over 60 large dams and reservoirs owned and operated by many different

Lake Pend Oreille



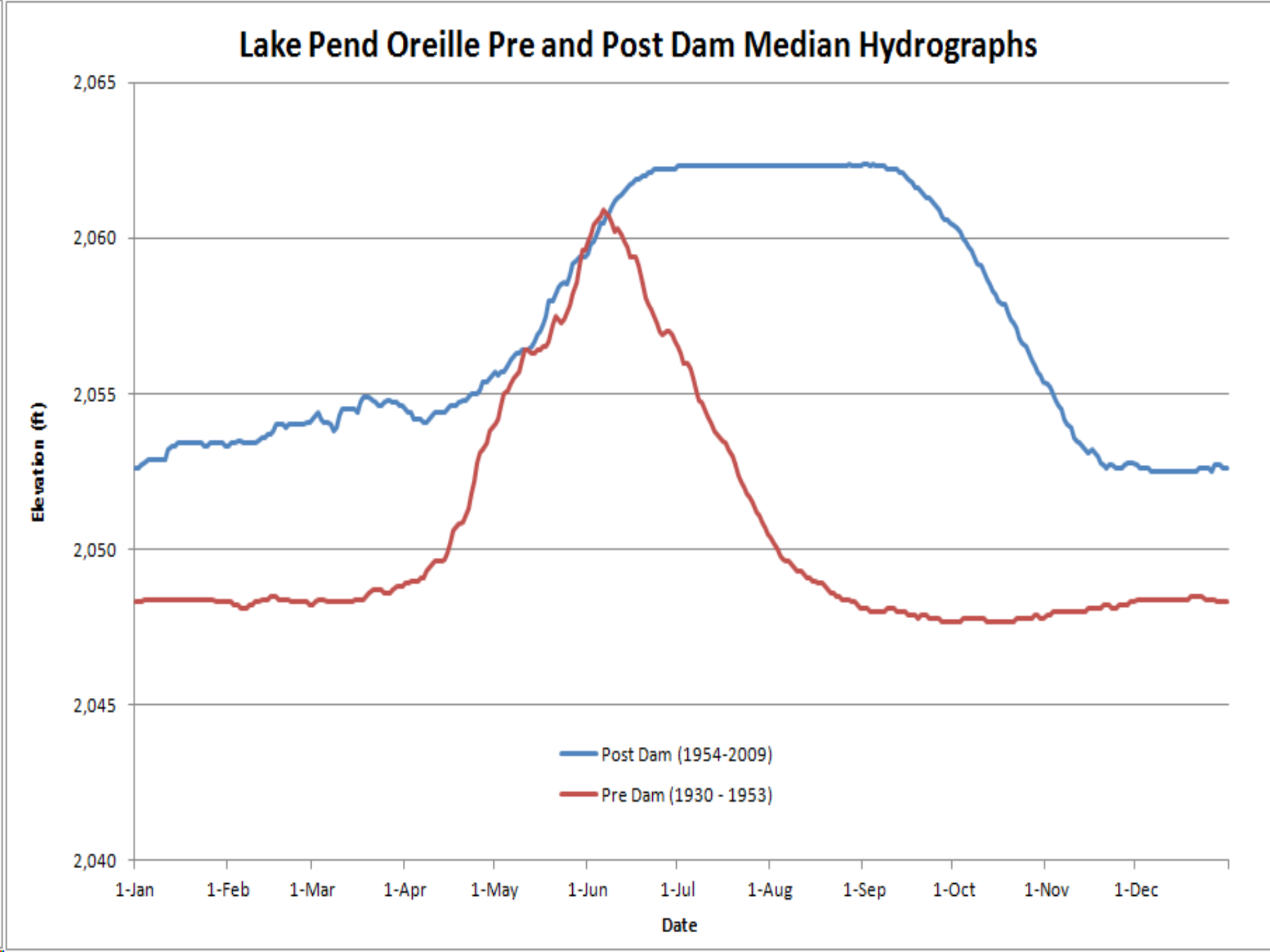

Lake Pend Oreille Summary Hydrograph
WATER SURFACE ELEVATION (FEET, MEAN SEA LEVEL)
2070
2068
2066
2064
2062
2060
2058
2056
2054
2052
2050
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
1997 Max=2065.74
1974 Max =2065.44
1974 Max=2060.82
UPPER RULE CURVE
LOWER RULE CURVE
SUMMARY HYDROGRAPH 1960-2013
Historical Min
Historical Mean
Historical Max
Operational Limits

Annual Operation for Albeni Falls Dam and Lake Pend Oreille

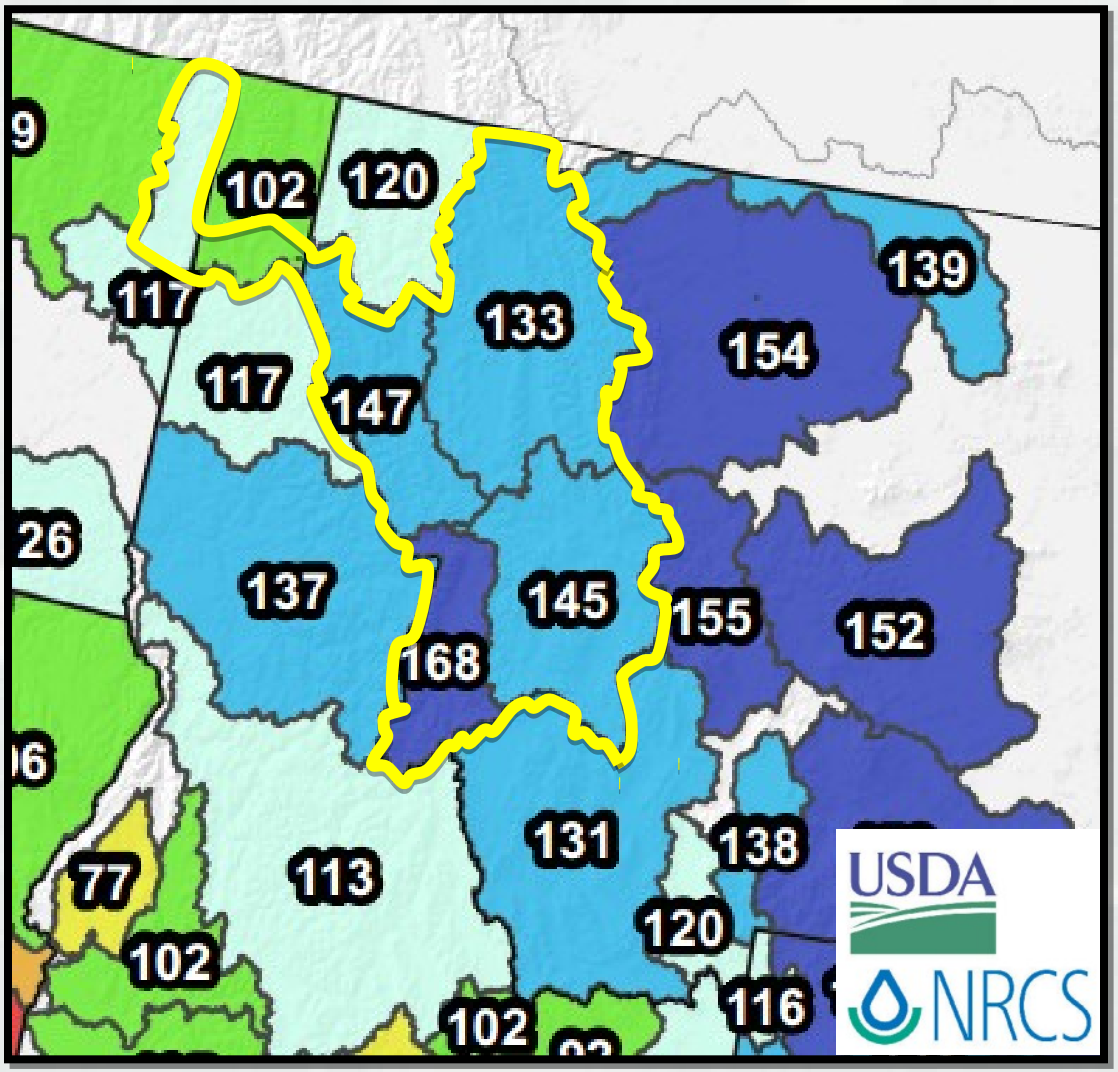
- Winter Jan through March
  - The lake level is held to no lower than the minimum control elevation to avoid dewatering kokanee redds.
  - The minimum control elevation can be set anywhere between 2,051 and 2,055 feet annually, with 2056 feet as a maximum elevation.
  - If the determined minimum control elevation is not met prior to the start of kokanee spawning, the lake is not lowered below the level at which kokanee are spawning to avoid dewatering kokanee redds.
  - During this period the Lake can be fluctuated to store and release water for power generation at downstream dams.
  - Flood risk management operations can store water up to 2060 feet during this period.
- Spring flood season - April through June
  - The objective is to manage runoff for flood risk management.
  - The project will frequently go on “free flow” to pass as much water as possible through the project which helps minimize flood elevations on Lake Pend Oreille.

Annual Operations cont'd

- Summer Holding Period July and August.
  - The lake is operated within a 0.5 range between 2,062 and 2,062.5 feet, stream flows permitting.
- Drawdown and Stabilization - Sept through Dec
  - The lake is operated between elevations 2,060 to 2,062.5 feet in September and targets a draft to an elevation no lower than the minimum control elevation by mid-November.
  - The November objective is to stabilize the lake within a 0.5 foot range of the minimum control elevation for kokanee spawning, prepare for winter floods and generate coordinated power for the whole FCRPS. In December the lake level is managed to avoid dewatering kokanee redds.


Lake Pend Oreille Pre and Post Dam Median Hydrographs
2,065
2,060
2,055
2,050
2,045
2,040
Elevation (ft)
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
1-Oct
1-Nov
1-Dec
Date
Post Dam (1954-2009)
Pre Dam (1930 - 1953)

% of Average Snowpack April 2014



Measured at SNOTELS in Mountains

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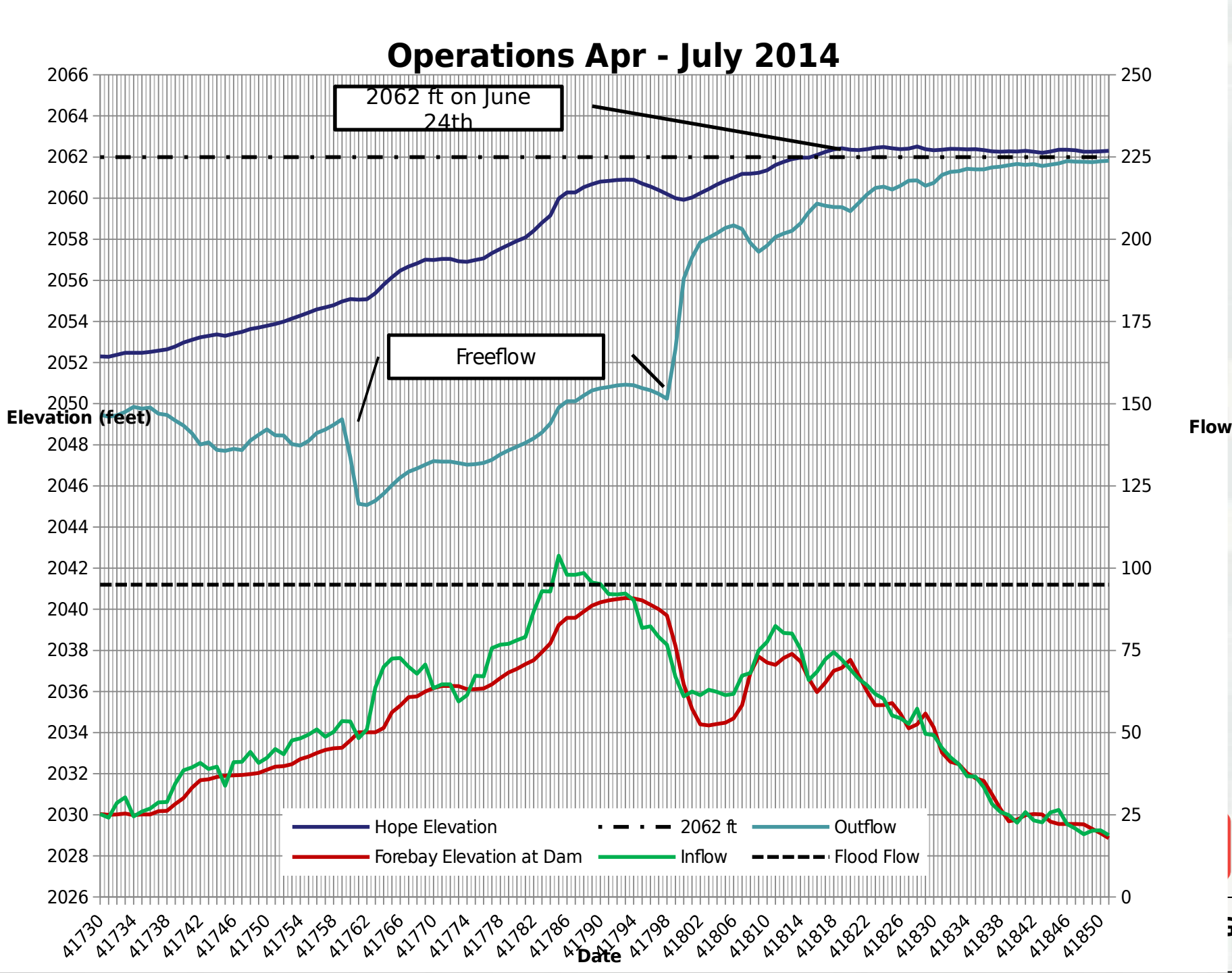
Operations Apr - July 2014
2062 ft on June 24th
Freeflow
Elevation (feet)
Flow (kcfs)
Date
Hope Elevation
2062 ft
Outflow
Forebay Elevation at Dam
Inflow
Flood Flow
2066
2064
2062
2060
2058
2056
2054
2052
2050
2048
2046
2044
2042
2040
2038
2036
2034
2032
2030
2028
2026
250
225
200
175
150
125
100
75
50
25
0
41730
41734
41738
41742
41746
41750
41754
41758
41762
41766
41770
41774
41778
41782
41786
41790
41794
41798
41802
41806
41810
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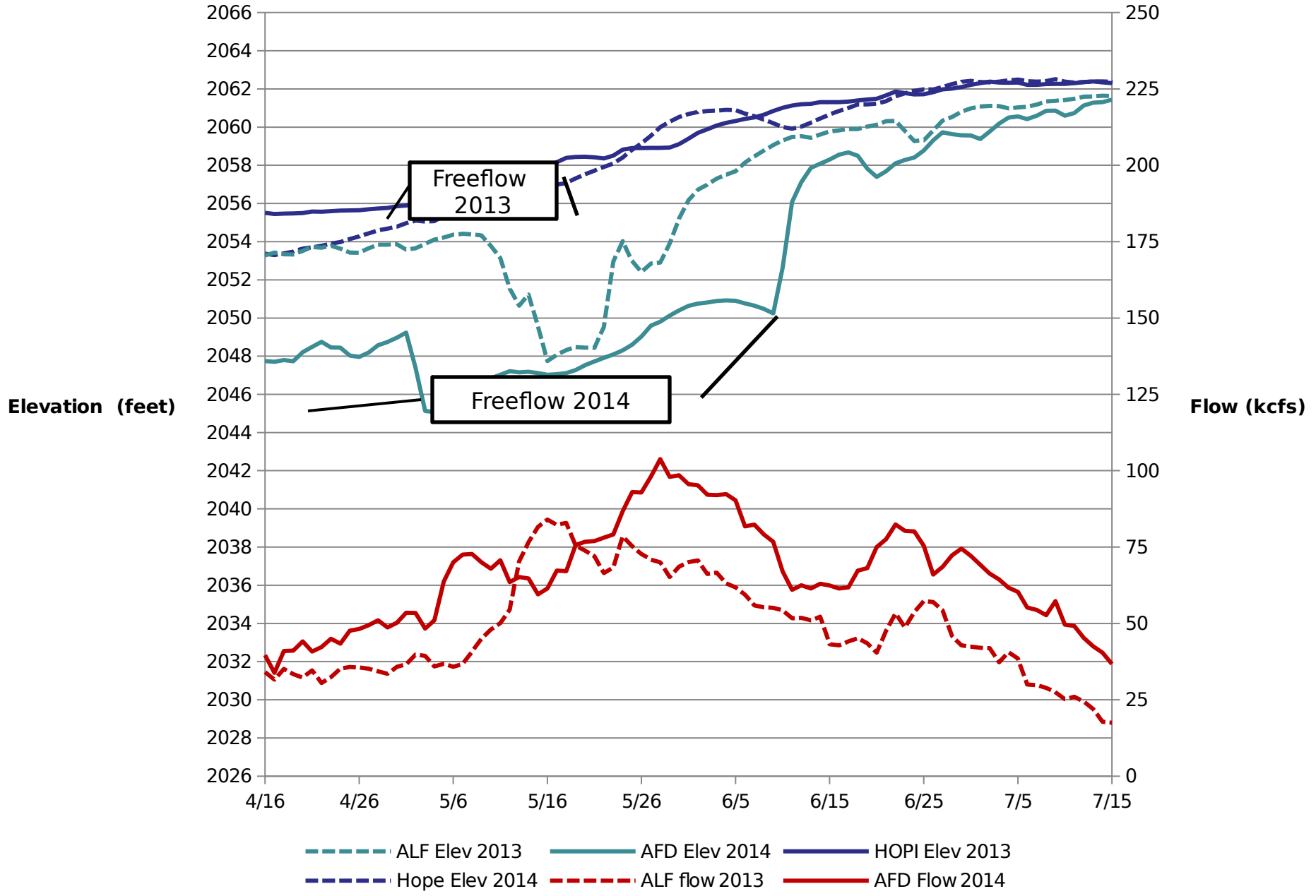
41850

Apr-Jul 2013 vs 2014



Operations Fall and Winter 2014

- September
  - Lake Pend Oreille above 2,062 feet through Sept 15
  - Stay Above 2,061 feet through the third week
  - Target 2,060.5 feet Sept 30
  - Rowing Regatta Sept 26 to 28 hold flows target 12 to 14 kcfs steady – weather and streamflows permitting
- October
  - Target 2,053 feet Oct 31st
  - Expect Flows Above 20 kcfs most of the month

Operations Fall and Winter 2014 cont'd

- November and Winter
  - Target being within the winter minimum control elevation of 2,051 feet by mid-November
  - No FWPO this year due to Clark Fork Delta work
  - Pool may fluctuate due to winter storms

Coordinating Fall/Winter Operations post-2014

- Currently working on a proposal with Federal partners, Kalispel Tribe, State of Idaho and Lakes Commission
- Corps will lead the fall lake level meeting
- Goal to finalize new lake level coordination process by Spring of 2015
- No change to the operating limits of the Lake

Summary

- Corps operates according to current water control plan
- **No plan to change summer operation which holds lake between 2062 and 2062.5 feet through Labor Day**
- Sept 2014
  - Lake Pend Oreille above 2062 feet through Sept 15
  - Stay Above 2061 feet through the third week
  - Target 2060.5 feet Sept 30
- April 2015 Spring public meeting – flood potential for 2015

Questions

- Seattle District – 206.764.3750
- Scott Lawrence – 206.764.6896
- www.nws.usace.army.mil
  - ► Flow updates and projections